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Soviet Radar Satellites Tracking Surface Ships

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The Soviet Union has orbited radar-carrying satellites that can monitor surface ship traffic around the globe.

The Soviets are understood to have put between eight and 10 radar satellites into earth orbit in the last four years, each one an improvement over the other.

The United States has put no radar satellites into orbit, at least partly because of U.S. confidence in reconnaissance satellites that photograph military activity around the earth.

Intelligence sources believe the Soviet radar satellites are still experimental, operating for only six weeks at a time and only over the Indian Ocean and the Baltic Sea.

Most space experts believe the goal of the Soviet radar satellite program is a means of detecting Polaris submarines as they move under the seas. One possible way of do-

ing this would be to have an infrared radar in orbit, a satellite that would follow a submarine by the heat it dissipated into the ocean.

The last of the radar satellites is one identified by the Soviets as Cosmos 626, which was launched from Tyuratam in the Soviet Union on Dec. 27, 1973. The satellite was rocketed into an orbit as high as 163 miles above the earth, where it stayed until Feb. 11 of this year.

On that date, Cosmo 626 "separated" into at least two parts, one of which was fired by its own rocket engine into a higher orbit. The North American Air Defense Command identified this part of the satellite as "A Object" of Cosmos 626, saying that it flew to an altitude of 614 miles.

The second part of the satel-

lite stayed in the lower orbit, falling into the atmosphere and breaking up from atmospheric friction on March 22.

Intelligence experts believe that the part of Cosmos 626 that went into the higher orbit was the power supply for the orbital radar. Sources think the power for the radar was supplied by radioactive heat from an isotope of polonium known as polonium-210.

This isotope is an extremely "hot" source of radioactive heat, which can be converted into electricity by a system that works by thermoelectricity. It is expensive, but is capable of generating as much as 2,000 kilowatts in a small space for a short period of time.

That much electricity would be enough to work a radar set in orbit that could scan surface ships and even identify these vessels according to shape and size.

The reason the Soviets rocket the power source into a higher orbit is to prevent the radioactivity from spilling out into the atmosphere. Polonium-210 has a half-life of 138 days, meaning that most of the radioactivity will have dissipated in less than a year.

In an orbit as high as 600 miles, the radioactive power supply would take as long as 20 years to fall to earth. By that time, the power source would no longer be harmful.